

BEST AVAILABLE COPY

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-307055

(43)Date of publication of application : 02.11.2000

(51)Int.Cl.

H01L 25/065

H01L 25/07

H01L 25/18

H01L 23/12

(21)Application number : 11-113144

(71)Applicant : SEIKO EPSON CORP

(22)Date of filing : 21.04.1999

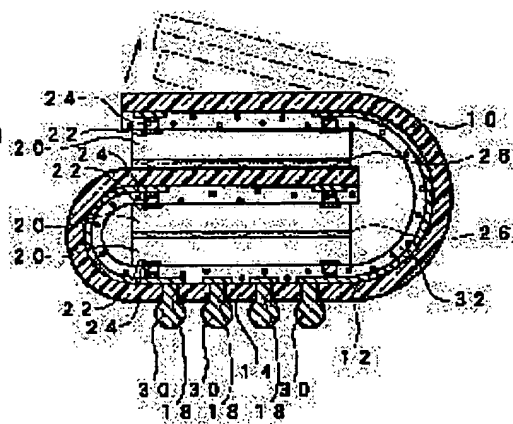
(72)Inventor : HASHIMOTO NOBUAKI

**(54) SEMICONDUCTOR DEVICE, ITS MANUFACTURE, CIRCUIT SUBSTRATE, AND ELECTRONICS****(57)Abstract:**

**PROBLEM TO BE SOLVED:** To achieve rework such as the planar expansion of a substrate and the replacement of a semiconductor chip after a semiconductor device is completed by maintaining the substrate where the semiconductor chips are arranged while being piled up in a flex state by a detachable connection means.

**SOLUTION:** A substrate 10 (a flexible substrate with heat-resistant property) can be flexed but is prepared in a state of planar expansion, and is formed on a wiring pattern 12. Then, an anisotropic conductive material 32 is provided at least at a bonding region in the wiring pattern 12, an electrode 22 (a bump 24) is aligned, and a semiconductor chip 20 is placed on the substrate 10.

Then, either the semiconductor chip 20 or the substrate 10 is pressed, and the wiring pattern is electrically connected to the bump 24 via the conductive particle of the anisotropic conductive material 32. After that, the substrate 10 is flexed, bent, or folded, and the plurality of semiconductor chips 20 are piled up. In this case, the semiconductor chips 20 or the semiconductor chip is glued to the substrate 10 by an adhesive 26.



## LEGAL STATUS

[Date of request for examination] 27.05.2003

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2003 Japan Patent Office

**BEST AVAILABLE COPY**